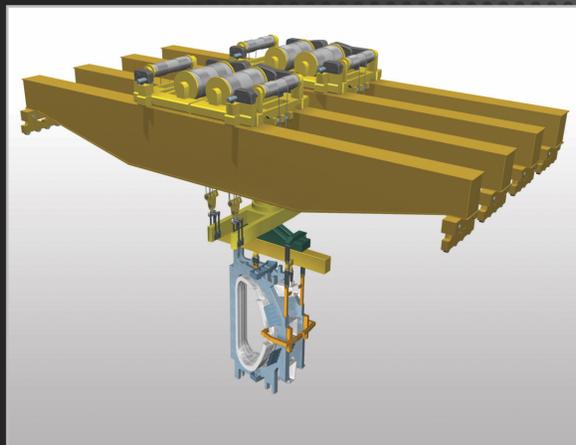


ITER MACHINE ASSEMBLY TOOLS

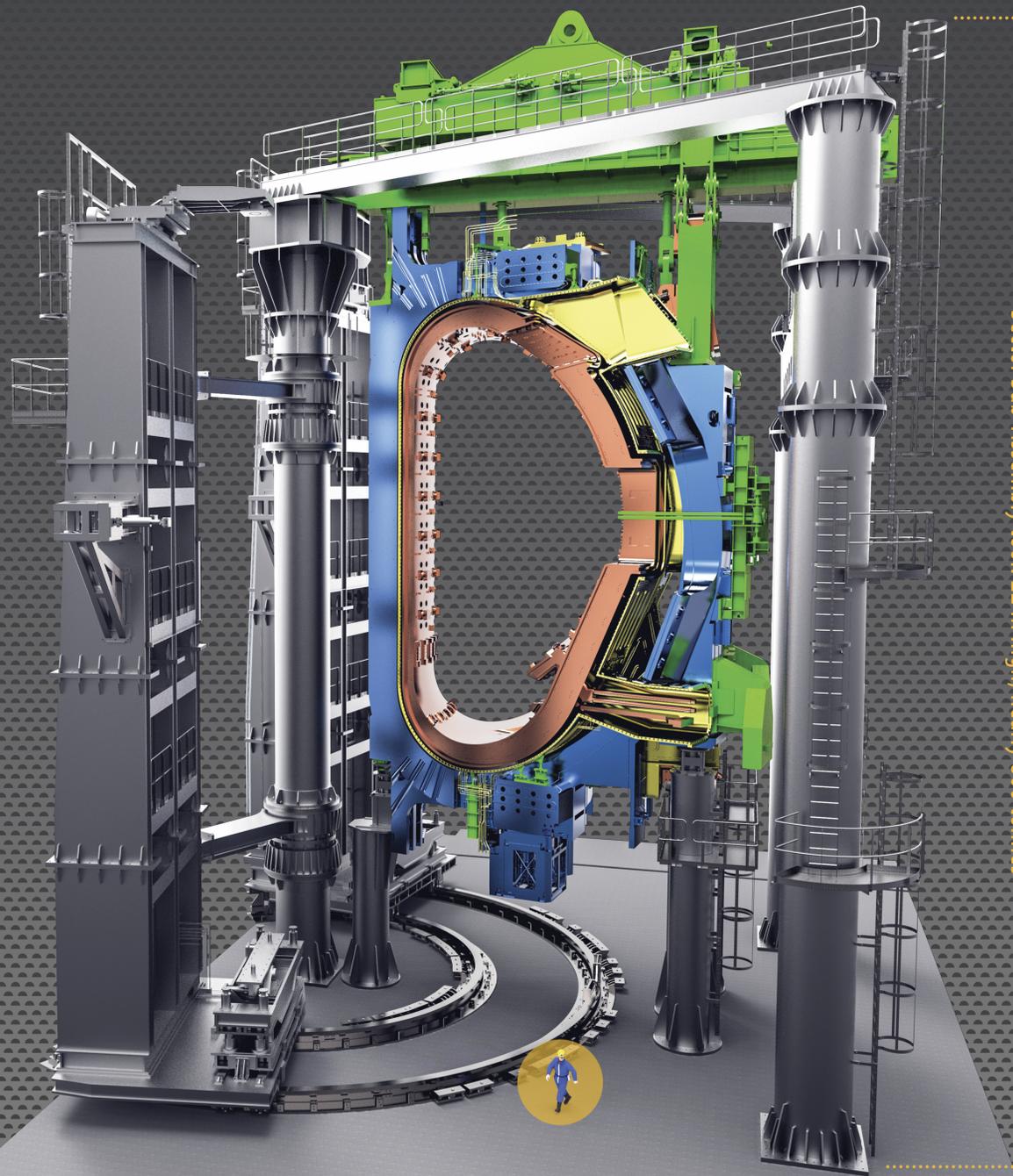
The ITER Organization has overall responsibility for the integration and assembly of components delivered to the ITER site by the seven ITER Members. In order to successfully pre-assemble and manoeuvre hundreds of large components, to very tight tolerances, a made-to-order set of 128 tools will be required.



The In-Pit Assembly tool is made up of a central tower and a series of beams. This tool will support the vacuum vessel sub-assemblies (three groups of three sectors) and align them while the vacuum vessel is welded together.



Two bridge cranes will work in tandem to lift and transport loads of up to 1,500 tonnes between the Assembly Building, where components are pre-assembled, and the Tokamak Pit.



Sector Sub-Assembly tool: 22 m high, nearly 800 tonnes

ASSEMBLY TOOL FACTS

128

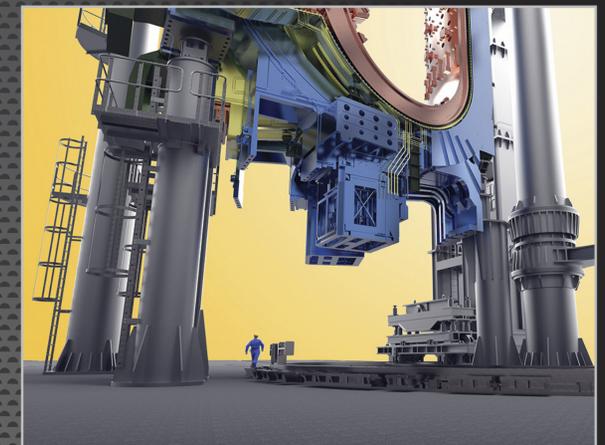
custom-designed tools to assemble, lift and finally manoeuvre ITER's supersized components into place

2-3 mm

of tolerance in the assembly of components that, in some cases, stand 20 metres tall and weigh hundreds of tonnes

1.5 million

estimated hours of labour to assemble the ITER machine over a four-year period



The Sector Sub-Assembly tool (seen in full, at left) will suspend the vacuum vessel sectors while carefully positioning and installing – via the rotary motion of the "wings" – the vacuum vessel thermal shielding and toroidal field coils. Two of these 800-tonne, 22-metre-tall tools will be positioned side-by-side during ITER assembly.